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A Proposed Reorganization of the Program of Industrial Arts For the F. W. Gross High School of Victoria, Texas

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A PROPOSED REORGANIZATION OF THE PROGRAM OF INDUSTRIAL ARTS FOR THE F. W. GROSS HIGH SCHOOL OF VICTORIA, TEXAS

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1958

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A PROPOSED REORGANIZATION OF THE PROGRAM OF INDUSTRIAL ARTS FOR THE F. W. GROSS HIGH SCHOOL OF VICTORIA, TEXAS

A Thesis

Submitted to the Faculty of

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By

George Ervin Batiste

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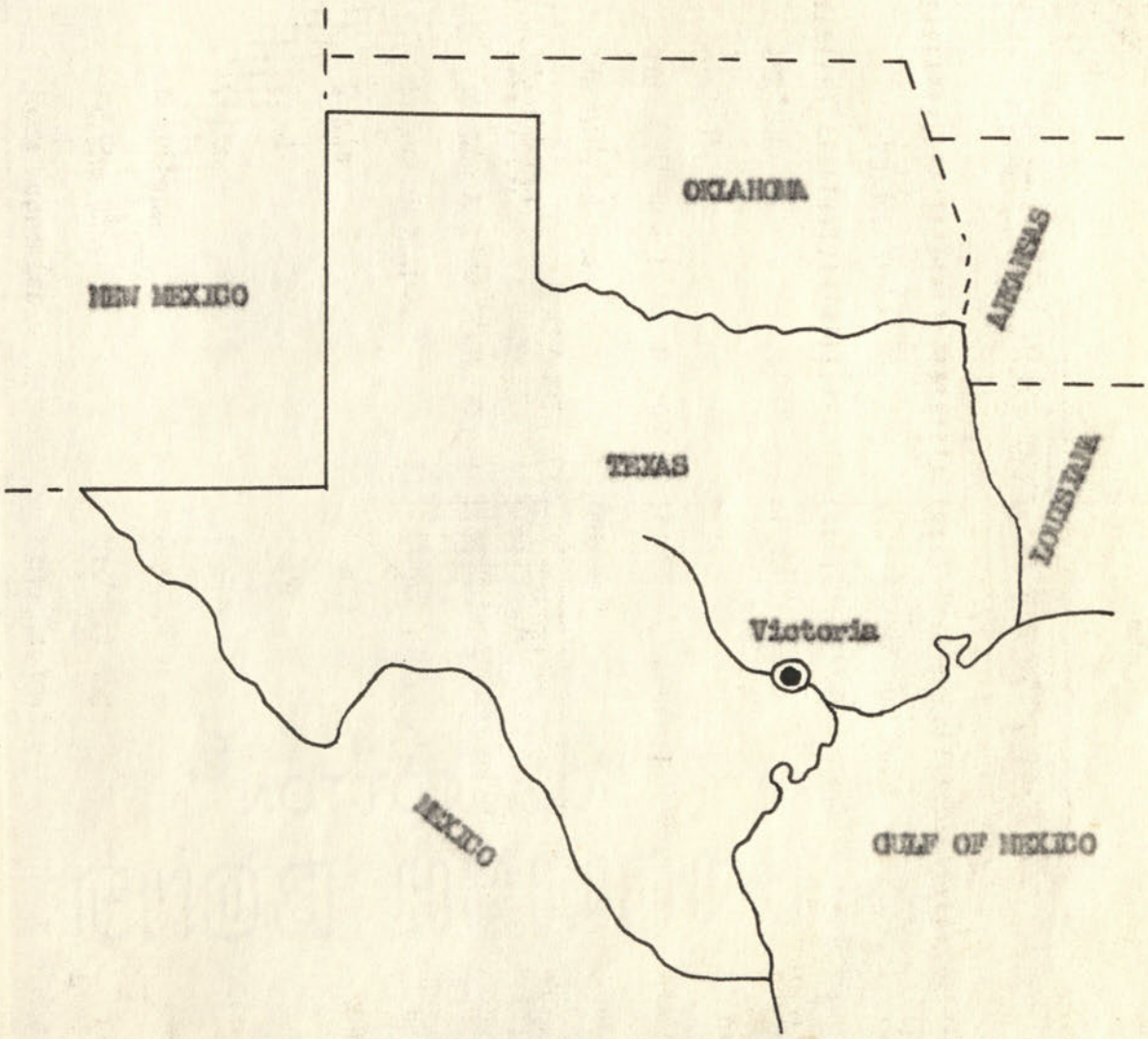
For helpful cooperation in collecting data and information used in this thesis, I wish to thank Mr. C. O. Bradley, Principal of the F. W. Cross High School, Victoria, Texas. Acknowledgement is also made of the assistance given by the Victoria Chamber of Commerce, The Texas Employment Commission of Victoria, Texas and the various other industrial people of the city and county of Victoria, Texas.

George Ervin Batiste

DEDICATION

I dedicate this paper to my wife,
Mrs. Doris M. Batiste, for her faith in me and for
being so helpful and understanding.

G. E. B.


OKLAHOMA
NEW MEXICO
ARKANSAS
TEXAS
LOUISIANA
Victoria
MEXICO
GULF OF MEXICO

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CHAPTER I

MEANING AND SCOPE OF THE PROBLEM

Introduction

The school today, as an institution, takes on a more important role than ever in past history. If we look upon the world today as one of chaos with many areas of complications, we find that the school has a greater opportunity to assume a larger leadership role in making the world a better place for tomorrow's generations to live. The world of tomorrow will demand more capabilities on the part of youth and it is the responsibility of the schools to adequately prepare the youth of tomorrow's world to take their places of responsible leadership and citizenship.

It is the primary duty and obligation of the schools to provide educational training for citizenship in our democratic society. One of the most important responsibilities of citizenship is that of participation in the work that aids in the growth and development of the community. A good citizen is a producer in a community. In order for one to assume the role of a community producer it is the opinion of those people concerned with industry and industrial education that this role can be met and accomplished through skilled training of the heart, mind and hand. It makes no difference whether

one is a producer in commerce, professional pursuits, public service, transportation, agriculture or manufacturing. The demands of the community is satisfied as long as he puts forth an effort toward the productive development of the community.

In communities where there are large concentrations of industry, it becomes the special job of the schools to project strong programs of general education and strong programs in industrial education. The industries of the communities will need workers and these workers must be able to participate effectively in the general or cultural life. The schools can assume more specific roles of giving to these future workers and producers those basic skills and that related information that will be so vitally needed if they are to compete successfully in the labor market.

Through strong industrial arts programs at the Junior High School and Senior High School levels the schools will go a long way toward satisfying the basic need of industry generally; good workers. The industrial arts programs will give the youngsters, or future workers, basic skills which will make substantial contributions toward meeting the basic individual or personal requirements of status, personal needs, and economic needs.

Statement of the Problem and Purpose of the Study

Recognizing the fact that the school must assume its obligation and prepare the youth for tomorrow's jobs, the F. W. Gross High School intends to do no less than to prepare the youth of the community in which it is located to be responsible citizens and productive con-

sumers. This study shall be centered around this fact. We know that it is good business as well as good educational practices to take a look, or reappraise our programs from time to time, to see if our values or objectives are in tune with the times. The curriculum of a school should be built around the needs of the immediate community. One of the primary objectives of this study will be to take a look at the industrial community of Victoria, Texas and the industrial arts program at its F. W. Gross High School. The problem grew out of the rapid development and growth of Victoria, Texas into a decidedly industrial city. We wondered what effect, if any, this rapid industrial development has brought to bear on the F. W. Gross High School and its program of industrial arts. We wondered if this huge, hungry industry brought along a need for a greater local labor supply. If so, then what should be the role of the industrial arts department of the Gross High School in efforts to aid in the supply of this labor demand.

Basic Assumptions - This study shall be based upon the following assumptions:

1. That there is a basic need for industrial arts training by the pupils of the F. W. Gross High School.

2. That there is a definite need for pre-vocational training by the Negro boys of Victoria, Texas.

3. That the present industrial arts program at the F. W. Gross high school is not meeting the needs of the boys of Victoria, Texas.

4. That basically the boy scholastics of Victoria, Texas are definitely and positively interested in industrial training.

Hypotheses - This study shall be further based upon the following working hypotheses:

1. That the present program in industrial arts at the F. W. Gross High School of Victoria, Texas is not satisfying the immediate needs of its schlastics.

2. That the present program in industrial education at the F. W. Gross High School of Victoria, Texas should be reorganized to meet basic or vocational industrial needs of the high school boys presently enrolled.

This study shall attempt to show areas in which there are specific needs for improvement of the existing program of industrial arts; physical organization and instructional organization. A complete program of reorganization shall be outlined based upon the community's industrial needs and the individual needs of the students themselves.

Limitations of the problem

The study shall be limited to the community of Victoria, Texas. It shall include only those segments that shall have bearing upon the F. W. Gross High School. It shall include those agencies concerned with industrial opportunities of the local community and those industrial units which may have an influence upon the program of industrial arts at Gross High School. The primary interest shall be improvement of industrial arts. Therefore, our study shall be further limited to that areaof operation.

Definitions of Terms

Included in this study are professional terms which are used by educators and professional people in the field of industrial education. To clarify the meaning of these terms as they are used here, the following definitions are hereby listed:

Vocational Education - A generic term whose scope embraces all kinds of purposeful education such as industrial, homemaking, agricultural, commercial, mining, and so on.[1] It is that phase of education which prepares people for efficient participation in some gainful occupation or employment.

Industrial Education - A generic term which includes all educational activities concerned with modern industry and crafts, their raw materials, products, machines, personnel and problems.[2] It applies to all types of education relating to industry including general education (industrial arts education), vocational industrial education (trade and industrial education), and technical education.[3]

Industrial Arts - Instructional shopwork which provides for all youth sound educational experiences that contribute to the satisfaction of their purposes, needs and wants. It is an integral part of the general program of all youth. It offers those learning experiences which as-

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1 Friese, John F., Course Making in Industrial Education. Peoria, Illinois: Charles A. Bennett Company, Inc., 1946, p. 7.

2 Ibid., p. 7.

3 Definitions of Terms in Vocational and Practical Arts Education. Washington, D. C.: American Vocational Association, 1954, p. 16.

sist boys and girls to understand the industrial and technical aspects of life.[4]

Vocational Industrial Education - Preparation for and entrance upon and for making progress in "trades" and industrial occupations of all kinds.[5]

Comprehensive General Shop - A type of school shop organization which provides equipment and facilities for activities in two or more industrial areas. In this shop work is carried on in, perhaps, several areas and usually under the supervision of one teacher.

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4 Op. Cit., p. 7.

5 Op. Cit., p. 7.

Related Literature and Procedures

From the outset it appeared that our problem would be one of a two-fold purpose; that of determining a need and the preparation of a program reorganization. Various methods were used in collecting data and materials used in this study. Available literature in the field of industrial education was consulted. Literature relating to the community of Victoria and the surrounding areas was referred to for needed valuable information. Many interviews and consultations were held with persons of various responsibilities in the city of Victoria.

During these interviews helpful literature was obtained that proved to be valuable reference sources. We interviewed and consulted on many occassions with the principal of the F. W. Cross High School. The Texas State Employment Bureau of Victoria, and Victoria Chamber of Commerce supplied most of the data and information relating to the industrial growth and progress in the immediate past and the future outlook for employment opportunities. Other valuable direct information relating to employment opportunities and industrial expansion was supplied by the Civilian Employment Manager of Foster Airforce Base, the Personnel Manager of the Aluminum Company of America, the Carbide and Carbon Chemical Company and various other companies of the area.

Literature obtained from the League of Women Voters, the Victoria Chamber of Commerce and the Victoria Bank and Trust Company was very helpful in statistical and fiscal data related to the growth and status of the city of Victoria. Information relating to the Victoria schools was used extensively in understanding philosophy, objectives,

and practices of the Victoria school system.

We relied heavily upon various items of literature in the field of industrial education relating to shops, activities, machinery and equipment, facilities and programs of instruction recommended for the operation of comprehensive shop programs in industrial arts. Information received from other shop teachers - particularly the shop teacher at the Patti Welder High School - regarding their programs proved helpful in this study. In formulating the proposed reorganization program we leaned heavily upon the literature of authorities in the field of industrial education. From this literature standards were established and ideals were set toward which our proposed program could build.

Our interviews stressed the question as to which shop areas should be included in the industrial program at the F. W. Cross High School. We needed to know the activities and experiences that our pupils would need to know for successful entrance into employment in the industries of the community. It was our concern to understand present employment needs and restrictions and those of the immediate future. Our interviews were centered around the following questions:

1. What products were manufactured by the organization?
2. What services did the organization offer to the community?
3. What number of people did the establishment now employ?
4. What number would be needed in the next ten years?
5. Does the business employ boys immediately upon high school graduation?

6. In what jobs do you employ high school graduates?

7. Are Negro boys employed? In what jobs?

8. What basic preparation is suggested that the high schools give to boys?

9. What basic industrial skills and knowledges are suggested that the industrial arts programs should include?

10. Is there a need for skilled craftsmen in your business?

It is hoped that from the information collected and the data assembled we will arrive at the establishment of a program in industrial that will be useful and workable in the F. W. Gross High School.

CHAPTER II

SETTING THE PROBLEM

The Community

Victoria, one of Texas' oldest communities, was founded in 1824. It is now the hub city of a seven county trade zone. Figure 1, below, shows that it is located in the center of Victoria county and is sur-

Figure 1. - Victoria and Surrounding Counties

rounded by the counties of Lavaca, Jackson, Calhoun, Refugio, Goliad, and Dewitt.

It is on the east bank of the Guadalupe River; twenty-eight miles from the Texas Gulf Coast, 128 miles S. W. of Houston, 115 miles South-

east of San Antonio and 95 miles North of Corpus Christi. Victoria is served by two railroads, bus transportation and air service. While still maintaining a romantic past of the great cattle enterprises that built up around the city, it has been industrialized, as evidenced by the rising buildings of industry. The Victoria Chamber of Commerce[6] says, "Victoria's future is indeed bright and one that offers unlimited opportunities to new businesses."

Since 1940 Victoria has experienced a tremendous growth in population. The 1940 Federal Census reported that Victoria had a population of 11,576 people. The 1950 Federal Census reported that the city was populated by 16,102 people. The 1956 population was estimated to be more than 50,000.[7] From all indications one could only expect that the population would continue to climb. This population of Victoria is made up of whites, Negroes and Mexican. In each of these groups it is difficult to find a first generation Victorians the population has increased so rapidly. However, with this population growth and the expansion of industry, Victoria strives to offer to its people all the conveniences of a great city while maintaining the friendliness and simplicity that are traditional with the great state of Texas.

The School System

Victoria has followed the pattern of most southern cities and

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6 Victoria Chamber of Commerce, "Victoria - Texas' Most Solid City." Victoria, Texas: 1956.

7 Ibid.

has maintained, for over a century, the dual school system. Realizing that a progressive community is built upon an educated citizenry, the people of Victoria are striving to equalize all its educational facilities and opportunities for all its citizens. In recent years units of the public school system have been open to all classes of the population without restrictions to race or creed.

The schools of Victoria include the public school system and various private agencies which includes thirteen grade schools, four junior high schools, two senior high schools and the Victoria Junior College. New improvements and expansions of facilities are now in progress throughout the city.

The F. W. Gross High School

The F. W. Gross High School is a unit of the Victoria public school system. It houses pupils of both the elementary and high school grades. One principal administers and supervises the entire program. The school is geared primarily towards college preparatory. Some limited courses, however, are offered in homemaking, business education and industrial education. Only woodworking is offered in the industrial arts shop. Under present circumstances the principal and his staff are making a real effort to make a real contribution to the youth of Victoria, Texas.

CHAPTER III

A REVIEW OF THE PRESENT PROGRAM AT THE F. W. GROSS HIGH SCHOOL

In 1954 the City of Victoria began integrating its public school system when Negro students were admitted to the Victoria Junior College. In 1956 the first three grades of the elementary schools were integrated. The F. W. Gross school, however, remains one hundred per cent populated by Negro scholastics and teachers. The elementary division is located in one building and the high school division is located in another. There is a central library in the high school building to accommodate both the elementary and the high school pupils.

The elementary classes are held in a thirteen-room frame structure which includes the school cafeteria. The high school classes are housed in a fourteen-room brick structure where some of the elementary classes are also conducted. A separate gymnasium is used by both schools to which an industrial arts shop is attached.

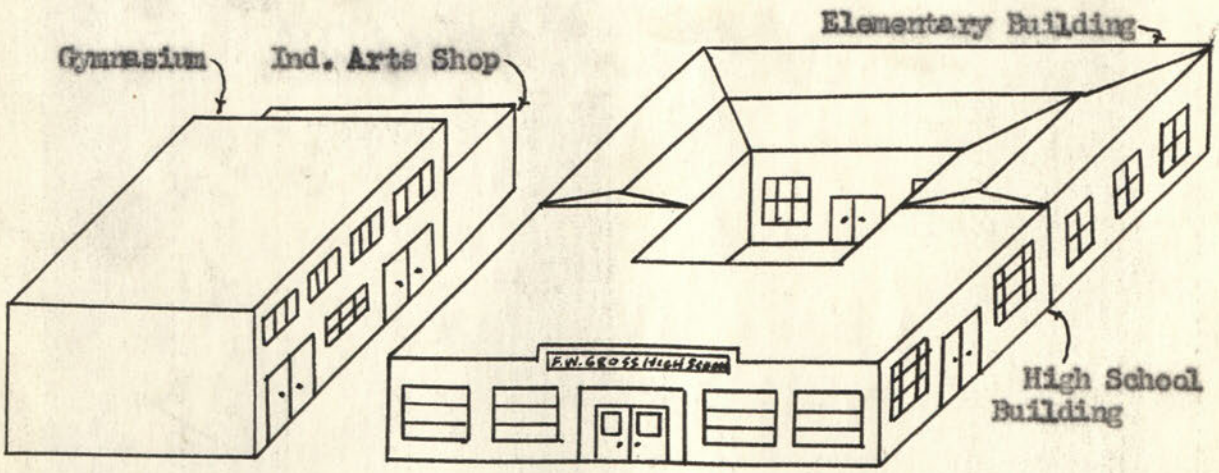


Figure 2. - Pictorial Drawing of F. W. Gross High School

These buildings accommodate a crowded total of 750 pupils of which 260 are high school. The students are taught by twenty-eight teachers including the principal. Each teacher is qualified and State certifed to teach one or more subjects; having a major or minor in the subject that he teaches. Each of the twelve high school teachers are qualified to teach one or more of the following subjects:

Band	Home Economics	Music
Bookkeeping	Industrial Arts	Physical Education (men)
English	Librarian	Physical Education (women)
Government	Mathematics	Social Studies

All of the teachers have Bachelor of Science degrees. Some of them have Master's degrees or they are working toward them. Three of them have done work toward the Doctorate degree.

The Gross High School operates on the 8 - 4 plan. The high school program includes grades nine through twelve. Table I, on the following page, shows the high school curriculum by years at the Gross school. The selection of courses or subjects is quite flexible in keeping with present curriculum practices used by most schools today. It satisfies State requirements for graduation and the unit requirement for college entrance.

The Industrial Arts Department

The industrial arts shop at the F. W. Gross High School, like most shops, is set apart from the rest of the school. Figure 2 shows its location behind the gymnasium. It is of wood frame construction which is adequate to accommodate the program in woodworking that is taught at

TABLE I

SUBJECTS OFFERED TO HIGH SCHOOL PUPILS AT THE F. W. GROSS HIGH SCHOOL

Ninth Grade	Tenth Grade	Eleventh Grade	Twelfth Grade
English I	English II	English III	English IV
General Mathematics	Algebra		Plane Geometry
World History	Texas History; Government	National History; Government	Economics
	General Science	Biology	Chemistry
Electives:	Electives:	Electives:	Electives:
Physical Education	Physical Education	Physical Education	Physical Education
Industrial Arts	Industrial Arts	Industrial Arts	Industrial Arts
Music	Music	Music	Music
Band	Band	Band	Band
Typing	Typing	Typing	Typing
Shorthand	Shorthand	Shorthand	Shorthand
Bookkeeping	Bookkeeping	Bookkeeping	Bookkeeping
Home Economics	Home Economics	Home Economics	Home Economics

the present time. The structure measures 90 feet by 20 feet (as shown in Figure 3 on the following page). It is divided into an office, a classroom, a tool room, a stock room, a project room and a working area. The working area includes four working tables complete with vises. The working space also includes the following pieces of equipment:

1 Band Saw

1 Jig Saw

1 Circular Saw (combination jointer)

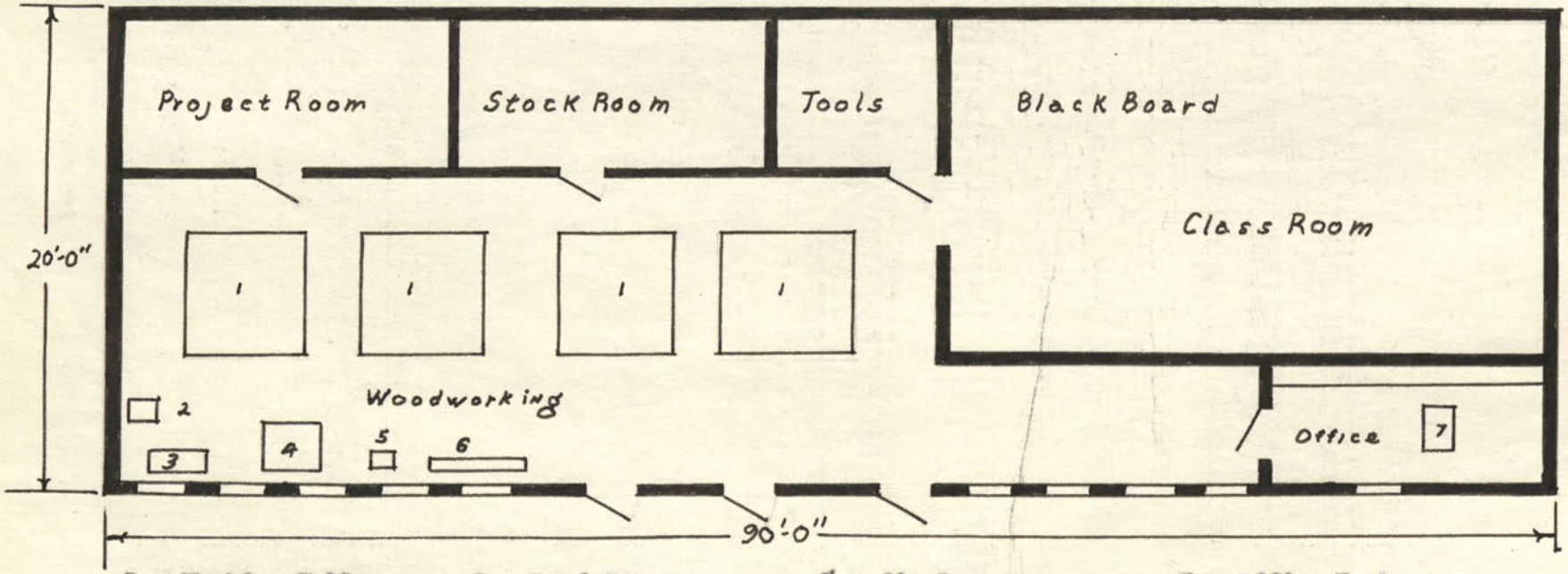
1 Wood Lathe

1 Drill Press

The entire tool supply consist of the following:

TABLE II - TOOL SUPPLY

Tools	Description	Number	Units
Brace	Ratchet	1	Each
Chisels	Wood	1	Set of 6
Clamps	Bar	3	Each
Clamps	"C"	4	Each
Clamps	Screw	3	Each
Dividers		1	Pair
Draw Knife		1	Each
Files	Wood	4	Each
Hammers	Claw	4	Each
Mallet	Wood	1	Each
Mallet	Raw Hide	1	Each
Marking Gauges		8	Each
Planes	Block	2	Each
Planes	Jack	2	Each
Pliers		1	Pair
Saws	Hand, Back	8	Each
Saws	Hand, Coping	4	Each
Saws	Hand, Crosscut	3	Each
Saws	Hand, Rip	3	Each
Screw Drivers		8	Each
Squares	Framing	2	Each
Squares	Try	8	Each
Wood Bits		1	Set of 6



1 - Working Tables
2 - Drill Press
3 - Band Saw
4 - Circular Saw
5 - Jig Saw
6 - Wood Lathe
7 - Office Desk

Figure 3. - Floor Plan of the Existing Industrial Arts Shop at F. W. Gross High School

Present school Policy requires that the pupils purchase out-of-pocket the materials and supplies needed for course work. Since most of the pupils are from homes where parents, for the most part, are financially unable to pay for the expensive type projects, very few of the expensive projects are suggested. There is no textbook used in the shop. Since the classes are not overcrowded the one instructor is able to give individual attention to each of the students in each class.

At present, the industrial arts program at the F. W. Gross High School is a one-teacher program. His educational qualifications include the Bachelor's degree in Industrial Arts Education from Prairie View Agricultural and Mechanical College. He is currently a candidate for the Master's degree in the same field. He is certified to teach industrial arts in the high schools of Texas by the Texas Education Agency. His teaching experience totals three years; all of which has been at the F. W. Gross High School.

Of the 105 boys presently enrolled in the four-year high school program at the Gross High School, only 68 are currently enrolled in the industrial arts shop courses. The other 37 are either attracted to the music subjects or the business subjects. There are five class periods per day; each lasting fifty-five minutes, five days per week. The classes number in size from eleven to twenty-two. No girls at the present time are permitted to take the industrial arts courses. They are directed to enroll in the courses in home economics. Some classes, however, are scheduled for eighth grade boys in elementary woodworking. A typical daily shop schedule is listed in Table III.

TABLE III

SCHEDULE OF SHOP CLASSES AT THE F. W. GROSS HIGH SCHOOL

Hour	Grade Level of Groups	Number in Class
8:30 - 9:00	Home Room Activities	
9:00 - 9:55	Off Period	
10:00 - 10:55	Eleventh Grade Boys	15
11:00 - 11:55	Eighth Grade Boys	10
12:00 - 12:30	Lunch Hour	
12:35 - 1:30	Tenth Grade Boys	20
1:35 - 2:30	Ninth Grade Boys	22
2:35 - 3:30	Twelfth Grade Boys	11
3:35 - 4:30	Off Period	

The course content for the four-year period ranges from the simple hand woodworking skills to the more complex or advanced machine operations. Skills and related information are taught to the boys through actual construction of various useful projects; projects that are useful in a practical sense. The scope of the program is limited to the tools and materials that are available to the students. It could hardly be said that the present program is one of exploration to the pupils or one with the occupation-finding aim in view. Since the program is designed primarily toward college preparation, the importance of industrial arts at the F. W. Gross High School is only significant

in the respect that it is included as a part of the general education curriculum.

An extensive effort is made to stimulate and create interest in things industrial. A chapter of the New Mechanics Club of Texas is located on the campus of the F. W. Gross High School. Three of the officers of the State organization are from the local chapter; the State Vice President, Treasurer and Secretary. The hobby interest is exemplified in the nature of the projects used to teach skills and information to the students. Tables IV and V show projects and activities of the industrial arts shop classes at Gross High School.

TABLE IV

INDUSTRIAL ARTS PROJECTS AND ACTIVITIES AVAILABLE TO THE EIGHTH, NINTH, AND TENTH GRADE BOYS OF F. W. GROSS HIGH SCHOOL

Projects	Activities
1. Paper Weight	1. Orientation and Shop Organization
2. What-not Shelves	2. History of Woodworking
3. Jewelery Box	3. Use of Various Hand Tools
4. Tie Rack	4. Care and Maintenance of Tools
5. Shoe Shine Box	5. Safety Habits in the Use of Hand Tools
6. Book Ends	6. Kinds and Uses of Woods
7. Broom Holder	7. Use and Care of Machine Tools
8. Door Stops	8. Safety Practices in the Use of Machine Tools
9. Flower Box	9. How to Measure
10. Small Lamp	10. How to Square
11. Match Box Holder	11. How to Plane
12. Shoe Rack	12. How to Saw
13. Bird House	13. How to Sand
14. Complex Hand Lamp	14. How to File
15. Book Shelves	15. How to Bore Holes
16. Picture Frames	16. How to Figure Costs of Project
17. Small Coffee Table	17. Shop Cleanliness
18. Wall Cabinets	
19. Night Stand	
20. Garden Furniture	

TABLE V

INDUSTRIAL ARTS PROJECTS AND ACTIVITIES AVAILABLE TO THE ELEVENTH AND TWELFTH GRADE BOYS OF F. W. GROSS HIGH SCHOOL

Projects	Activities
1. Coffee Tables	1. Lathe Turning
2. Upholstered Chairs	2. Cicular Saw Operations
3. Chests of Drawers	3. Drill Press Operations
4. Single and Double Beds	4. Care of Shop Machinery
5. Book Cases; Shelves	5. Shop Safety Practices
6. Dining Room Tables	6. Processes of Glueing
7. Kitchen Tables	7. Furniture Finishing
8. Living Room Sofas	8. Furniture Repairing
9. Desks	9. Simple Upholstering
10. Occassional Chairs	10. Working Drawings and Sketches

Summary

The people of Victoria have made tremendous strides toward providing adequate education for all of its citizens during the past ten years. However, progress and improvement at the F. W. Gross High School has not kept pace with other units of the public school system in terms of quality and quantity of course offerings, facilities and the program of instruction.

The program presented at the Gross High School satisfies the requirements for college entrance but does very little to satisfy the requirements for job entrance. As usual, the industrial arts shop is placed away from and apart from the main building structures. Some of the enrollees in the industrial arts courses are those who could not maintain satisfactory progress in the so called "literary courses."

We still find those pupils in industrial arts classes that other teachers find "too hard to handle." There is, however, an effort being made to "do something" for these boys to render them capable to be able to progress satisfactory in some menial occupation in industry.

The industrial arts shop at the F. W. Gross High School has a minimum amount of tools and equipment for use by its pupils to do good work in the one area of woodwork that is offered to them. There is adequate space in the shop to accommodate the small classes as they appear for instruction. Satisfactory arrangements of project storeage is utilized effectively. However, the practice of having each student purchase his own supplies and materials out-of-pocket is one that could stand considerable improvement.

As a one-teacher program the present program at the Gross High School is perhaps accomplishing its objectives. One wonders why it attracts only two-thirds of the male enrollemnt of the school. Some effort should be made to understand why girls are not attracted to the program.

CHAPTER IV

THE INDUSTRIES AND JOB OPPORTUNITIES IN THE VICTORIA SECTOR

Throughout all the nation, no sector is attracting the attention of industrial leaders with such beckoning array of benefits as the Southwest; and the Golden Crescent of the Gulf Coast is the pivitol point for gearing multi-million dollar expansion projects for many industries. Now a relatively new development is springing up with Victoria to be the hub of a tremendous future. Blessed with a variety of unsurpassed resources, a climate for unmatched productivity and a healthy labor market, Victoria has begun to solve its last major obstruction. It has recently started to build a barge canal to connect the city with the busy Intracostal Canal and the Gulf of Mexico.[8]

The community of Victoria, in recent years, has attracted units of some of the largest industrial companies of the nation. The next few paragraphs shall describe some of them.

Industrial Resources

E. I. DuPont De Nemours and Company - The first large plant to move into the Victoria area was DuPont. It began production in 1951. The plant manufactures adiponitrile, a fluid which is used in the pro-

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[8] Industrial Committee of Victoria, Your Potential is Greater in the Victoria Sector, Victoria Chamber of Commerce, 1957, p. 5.

duction of nylon. The employment in this plant is approximately 350 people. An annual payroll of approximately $3,100,000 contributes greatly to the economy of the area.

Aluminum Company of America - This plant presently employs 1,400 employees and is in process of completing an expansion program started in 1956. The expansion program was one to build an adjoining $45,000,000 aluminum plant which will employ an additional 650 employees. These aluminum plants are engaged or will engage in the manufacture of aluminum.

Carbide and Carbon Chemicals Company - The newest addition to the area's great industrial growth is the Carbide and Carbon Chemicals plant. This plant went into production in 1954. Its major products are polyethylene, the well known "squeeze" plastic; ethylene glycol, a component of "anti-freeze;" and butadiene, a component of synthetic rubber. The plant employs approximately 500 people with an annual payroll of near $2,500,000.

Foster Airforce Base - Foster Airforce Base has been designated as headquarters for the Nineteenth Air Force. The total military personnel which comprises the base is not listed or unavailable. However, through its payroll and local purchases, this base alone spends more than $11,000,000 annually in the Victoria Area. The Foster Airforce Base employs by far the greatest number of civilian workers than any of the other industries in the sector. Many of the employees are skilled workers and many of them have jobs calling for a minimum amount of training.

Other industries in the Victoria sector with 20 or more employees

are shown in Table VI below.

TABLE VI

FIFTEEN OTHER INDUSTRIES IN THE VICTORIA AREA WITH TWENTY OR MORE EMPLOYEES[9]

Industry	Product	Employees
Baass Bros. Concrete Company	Concrete Pipe	55
DuPre Sand and Gravel Company	Sand and Gravel	27
Fordyce Gravel Company	Sand and Gravel	75
Gifford Hill American Company	Concrete Pipe	25
Groce-Wearden Grocery Company	Groceries	50 *
Halliburton Oil Well Cementing Company	Well Cementing	50
Heldenfels Brothers	Sand and Gravel	24
Lee Baking Company	Bread	75
Lindsey Pipe Wrapping Company	Pipe Coating	50
Safety Steel	Steel Fabricating	33
Southwestern Bell Telephone Company	Telephone Service	50 *
South Texas Cotton Oil Company	Cotton Seed Oil	40
Tennessee Gas and Transmission Co.	Natural Gas	71
Texas Concrete Company	Concrete Pipe	20
Victoria Concrete Company	Concrete Pipe	55

* Estimated

Oil and Gas Resources - Reports show that in 1955 Victoria County

[9] Ibid., pp. 7 - 9.

was dotted with 889 oil wells with an annual production of 7,283,556 barrells having a sales value of $21,673,370. The gas wells of the County produced gas and gas products amounting to a sales value of $10,262,280.[10]

Other resources of Victoria County include sand gravel, sulphur, salt, limestone and shell clay.

Agricultural Resources

The agricultural resources of the Victoria sector are the oldest. The sector has been prominent in ranching and farming since 1824. Victoria is known as a ranching center. The County ranks near the top in numbers of cattle for any one county. Interests in the County own 66,000 head of cattle. The total value of livestock and poultry production in the County is estimated to be more than six million dollars.

Of the 572,000 acres of land in the County, 97,000 acres are under cultivation. The major crops are cotton, grain sorghums, corn and rice. The total Value of the production from these crops is $5,963,000.

For years agricultural production and agricultural industries in Victoria utilized the bulk of available labor in the community. As the agricultural production increases, the agricultural industries increase. The population increase in this sector demands that these industries supply those necessary items of food and food products required to maintain the rapidly increasing labor force. Table VII

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[10] Ibid., p. 11.

shows the agricultural industries in Victoria County.[11]

TABLE VII

AGRICULTURAL INDUSTRIES IN VICTORIA COUNTY

Industries	Number in County
Cotton Gins	10
Cotton Compresses	1
Cotton Oil Companies	1
Commercial Grain Elevators	2
Onion Shipping Plants	1
Implement Dealers	5
Meat Processing Facilities	5
Creameries	2
Livestock Auctions	1

Other Areas of Commerce

Many other areas of commerce are included in the source of income which produces or regulates the economy of Victoria. These include power and fuel, the railroads, bus lines, motor freight lines, waterways, City airlines, highways and various kinds of enterprises and proprietorships. Many of these services demand that their employees be trained or skilled in some specific trade or occupation. Job clas-

[11] Ibid., p. 17.

sifications and distribution may be seen in following Table VIII.[12]

TABLE VIII

THE TOTAL LABOR FORCE IN JOB FIELDS FOR THE VICTORIA AREA

Job Fields	Male	Female	Total
Professional, Technical and Kindred Workers	714	650	1,364
Managers, Officials and Proprietors	1,622	253	1,875
Clerical and Kindred Workers	671	1,290	1,961
Sales Workers	824	370	1,194
Craftsmen, Foremen and Kindred Workers	2,667	27	2,694
Operatives and Kindred Workers	2,376	232	2,608
Private Household Workers	43	690	733
Service Workers (except private household)	580	545	1,125
Laborers (except farm and mining)	1,192	240	1,432
Non Farm Operatives not Reported	252	89	341
Total Non-farm	10,941	4,386	15,327
Farmers and Farm Managers	1,018	25	1,043
Farm Laborers and Unpaid Family Workers	165	43	208
Paid Farm Workers (excluding Foremen)	433	48	481
Total Farm	1,616	116	1,732
Total Labor Force	12,557	4,502	17,059

12 Texas Employment Commission of Victoria

Included in the foregone figures pertaining to the labor force of Victoria are those of individual enterprizes and proprietorships. Among these may be found tailors, dry cleaners, restaurant workers, beer tavern workers, barbers, masons, carpenters and the usual variety of workers found in a city the size of Victoria. Figures on the exact number of Negro workers in Victoria were not available. However, the Victoria League of Women Voters[13] estimates the following to be the distribution of the population of the city:

Anglo American	65%
Latin American	25%
Negro	10%

Futher labor statistics show that the wrkers of Victoria are as follows:

50.4 % of the population are women

66.6 % of the population is 14 years or over

25.7 % of the population's total employment are women

As in most cities, a huge percentage of the common labor jobs of Victoria are held by Negroes. However, Negroes are not eliminated from the possibilities of obtaining work of a skilled nature. Questions included in our interviews with employers were answered in manners indicating that the skilled Negro is acceptable and would be hired in any capacity in which he is capable and well qualified.[14]

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[13] League of Women Voters, Know Victoria, 1956.

[14] See Questionnaire in Appendix A

There are a few Negroes who practice or hold jobs in the skilled trades or occupations in Victoria at the present time. Table IX shows the skilled Negro workers of Victoria.

TABLE IX

THE NUMBER AND AVERAGE WAGES PER HOUR OF THE NEGRO SKILLED CRAFTSMEN OF VICTORIA, TEXAS

Skilled Craftsmen	Number	Average Wages Per Hour[15]
Auto Mechanics and Helpers	6	$ 1.90
Barbers	7	1.20
Beauticians (Operators)	4	1.75
Brick Masons and Helpers	1	2.00
Carpenters and Helpers	6	1.50
Cooks (Commercial)	4	1.50
Electricians	1	1.75
Painters	4	2.00
Plumbers and Helpers	3	1.25
Radio and Television Repairmen	3	1.80

It was estimated by the Victoria Chamber of Commerce that within the next ten years the required labor force for the Victoria would be double its present size.[16]

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[15] These figures were estimated averages of information received from the respective craftsmen.

[16] This information was obtained from a representative of the Industrial Committee of the Victoria Chamber of Commerce.

Summary

Industry has experienced tremendous growth and expansion in Victoria during the past ten years. The population has more than doubled during the same period of time. This industrial growth has made new demands upon the labor force of the community and the surrounding sectors. A new labor force is being created daily by the influx of people who arrive daily to make Victoria their home. The Foster Airforce Base has been a real salvation to the community for it makes a real contribution by utilizing so much of the unskilled labor. Its contribution to the community is also recognized and felt through the huge payroll that is brought to Victoria. The local purchases made by the Airforce Base yearly adds into the millions of dollars.

Victoria's growth is not confined or limited to the industrial area alone. Its sand, gravel and concrete industries have expanded and its agricultural production has always been near the top as related to other Counties in Texas. These industries, together with the oil and gas industries, make their labor demands felt by paying comparable wage scales to compete for the available workers.

Victoria, like other cities, has the usual need for various kinds of skills. Although, many of the industries are satisfied with workers of unskilled hands. A rapidly developing industrial city like Victoria finds it necessary to utilize a large percentage of women to help to supply the labor demands. Victoria makes various uses of its Negro labor. Though small, Victoria utilizes the skilled hands of its Negro craftsmen. The number of Negro skilled mechanics in Vic-

toria are found in the few fields of the building trades.

The next ten years promises to be one of tremendous growth in in Victoria in terms of population, industrial expansion and the need for workers who will have skills and the potential necessary to build a great industrial empire.

CHAPTER V

SIGNIFICANT FACTS REVEALED BY INTERVIEWS RELATING TO INDUSTRIAL ARTS THE F. W. GROSS HIGH SCHOOL

Since work was started on this project, more than a year ago, more than one hundred people were engaged in formal or informal interviews. People in large organizations were contacted. People in small organizations were contacted. Information was sought relating to the industrial potential of Victoria, Texas generally. Specific information was also solicited relating to factors centered around questions included in a questionnaire.[17]

From the information and data collected, several factors and calculated beliefs were found to exist that ought to be included in the thinking and planning of those entrusted with the direction of the school programs of Victoria. Several factors were found that surely would have direct bearing on the high school programs of Victoria generally and will have specific relationships to the program of the F. W. Gross High School.

On the basis of past industrial growth in Victoria, most of our contacts are in agreement and completely optimistic concerning the city's potential and possibilities in greater growth, development and

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17 See Appendix A

wealth. The majority of those large organizations who are engaged in manufacturing, and the majority of the smaller organizations who offer personal services to the public, realize the need for a more organized planning on the part of the city, its businesses and school system.

Each business person interviewed felt that his business would continue to grow and develop to the extent that it would require a one hundred percent increase in personnel or the number of workers in the next ten-year period. Those industrialists interviewed calculated, on the basis of planned future expansion, that the need for more workers on the part of industry would be doubled in the next ten-year period.

Our interviews revealed that Victoria's industry would, and is now in the process of hiring boys directly from the high schools with no past job experiences. The practices of the various industries are to select their workers without regard to race or creed. However, they are concerned about the political beliefs of those new people who enter their plants. Although the industries adhere to non-discriminatory policies and practices, some show preferences in offering to the Negro boys jobs of the personal service variety.

Most Negro owned businesses use Negro help. Most Mexican businesses use Mexican help. Most of these jobs are of the unskilled classification as are most of the jobs that these two groups hold in the city of Victoria. From information received from various sources, the primary reason for these groups being used in unskilled jobs, is the fact that basic skills are not offered to them in the schools

from which they come.

Suggestions were received from many quarters that the schools should include strong programs of industrial arts to give to future workers those basic industrial and mechanical skills and knowledges so vitally needed by young workers and consumers. Suggestions were noted and acknowledged that the industrial arts programs of the high schools should include experiences in drawing, woodworking, electricity and electronics, automotives and metals. The majority of the people interviewed did not think that Victoria was ready for exclusive vocational schools at the present time but, the time is rapidly approaching when some consideration must be given, by the school planners, to the installation of specific schools or courses to train craftsmen in various trades and occupations.

Should the F. W. Gross High School revamp its industrial arts program to include more of the industrial areas, it was felt that a greater potential and greater possibilities would exist from which to up-grade the jobs in which Negro boys would gain employment. The short training programs operated by most of the industries would then have a broader foundation upon which to build if prospective workers had included among their experiences those basic or beginning experiences found in the comprehensive industrial arts shops.

CHAPTER VI

A PROPOSED INDUSTRIAL ARTS PROGRAM FOR THE F. W. GROSS HIGH SCHOOL

A good, sound course of study with a basic textbook, good references, an adequate supply of selected materials and teaching aids, a well trained, experienced and competent teacher and a well equipped shop are the fundamentals for a good industrial arts program. It is this type of program that is proposed for the F. W. Gross High School. It is the duty of the F. W. Gross High School to promote and guide the educational growth and understanding of its students in the light of the objectives of industrial arts and the potential industrial and labor needs of the community of Victoria.

It is very essential that the planners of an industrial arts program for a school give some thought, time and consideration to the following factors:

1. An analysis should be made of the community for which the laboratory is being planned. The financial status of the school should be determined. Since the school shop should be adopted to fit the needs of the community, a study of the industrial background should be made.

2. The objectives of general education should be carefully analyzed and the industrial arts department should be planned and established accordingly.

3. The objectives of the industrial arts department should be studied and

analysed.

4. The activities selected for the pupils should be thought of in terms of future activities of the pupils and so provided.

5. Other factors to be considered for which the answers must be found are as follows:

a. Funds available
b. Types of subjects to be taught
c. Expected enrollment
d. Age and grade levels of the pupils to be taught
e. Possible future additions
f. Location of shop with reference to other rooms or buildings
g. Whether shop is to be a separate building or a wing of the main building
h. Type of tool storage
i. Orientation of the shop; direction to face
j. Auxiliary rooms desired
k. Type of illumination
l. Type of heating and ventilation
m. Type of floor desired
n. Toilet facilities needed
o. Type of electric power available
p. Display space desired
q. Safety precautions
r. Outside entrances, access for deliveries

Philosophy

The educational philosophy of the F. W. Cross High School should lay a foundation broad enough, in the democratic concept, to bring about the balanced development of attitudes, knowledges and appreciations of the common culture, personal and social values and basic skills. Freedom and rights of the individual must not be interpreted as license. However, equality of opportunity is a social value of exceeding importance. Self-discipline, the ability to control one's own life, should be basic in principle as well as in fact. The use of one's physical and mental energies, as a means of obtaining his basic material needs is important in essence, for work is an essential value in providing for an enriched life.

The philosophy underlying the industrial arts program should be approached and presented for what it is; a part of general education. It should subscribe, however, to the most fundamental procedure in education, namely, learning through a combination of seeing, hearing, and thinking and doing.[18] It should be kept foremost in the minds of those concerned that it is exploratory or occupation-finding in character in its contribution towards general education.

Purposes

If it is the aim of the F. W. Cross High School to prepare for complete living through (1) the maintenance of health, (2) command of the fundamental processes, (the tools of learning), (3) worthy home

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[18] Friese, John F., Course Making in Industrial Education. p. 60.

membership, (4) worthy use of leisure time, (5) effective citizenship, (6) the development of ethical character, and (7) vocational competence, then its industrial arts program ought to reflect in its composition a subscription to those basic principles of secondary education.

A set of objectives should guide the program in all aspects of its curriculum. These aims and purposes should include the following values:

1. The pupils should gain some understanding and appreciation of the processes of industry.

2. The pupils should be given the opportunity to explore some areas of industry as bases for choosing occupations.

3. The pupils should be given opportunities to develop some knowledge of tools, their care and use.

4. Pupils should develop some skills and dexterity in the use and care of tools.

5. Pupils should gain some information about industry, its products and services to make them more intelligent consumers.

6. Pupils should have opportunities to select and develop in useful avocational or "hobby" projects.

7. Pupils should develop certain appreciations and "handy man" abilities which may be useful in the care, upkeep and minor repairs of the home.

Specifically, and in light of these stated purposes, the F. W. Cross High School should put forth an effort toward meeting the needs of its students and aid in efforts to satisfy the labor demands of

of the community of Victoria through an industrial arts program built around the areas of drawing, woodworking, metal work, electricity and auto-mechanics. Basic skills taught to the youngsters in these areas shall serve all of the purposes herein outlined.

Organization

The shop organization of the industrial arts department of the F. W. Gross High School should be the comprehensive general shop. This type of shop organization has been developed to meet the exploratory needs of pupils, especially in the one-teacher or two-teacher situation. It can be used extensively for beginning experiences to be followed by more intensive courses in other type shops.

Class Periods - State and local regulations set the length and hours of the school term at Gross High School. The school year consist of thirty-six weeks of supervised instruction. It is divided into two semesters of eighteen weeks each. Each shop class is scheduled to meet five times per week. Class periods are fifty-five minutes in duration.

Methods of instruction - All of the most widely used methods of instruction may be used in teaching industrial arts classed. Those adopted to be best for shop classes are demonstrations, shop talks, and student practice sessions in actual performance. The methods to be used at the Gross High School should be selected according to the type of knowledge, skill or information that is to be given to the pupils. The sizes of the classes will also have some bearing on the method of instruction to be used.

Class Size - It is recommended that the size of each shop class should be no more than twenty-four students each. In instances where the local requirements demand a larger maximum or minimum these regulations must be respected.

Building Facilities

The shop facilities of the Cross High School should be organized in a one-floor structure as shown in Figure 4 on the following page. The present location of the shop could be used but the size should be increased to accommodate the new program. If the existing frame structure must be used it should be increased from the 1800 square feet of floor space to 5400 square feet. If a new structure is to be built the following criteria could be of extreme value in planning the new structure:

Place - The building should be an entire separate building.

Floor level - A one-floor structure is desirable.

Accessibility - Adequate outside-opening doors should be provided. Should not be too far from the main building.

Fenestration - Windows should be grouped on one side; preferably the north side to take advantage of the north light. Windows should not be spared.

Floors - Should be installed to accommodate the shop area to be served. The woodworking area should have wood flooring. Other areas may have concrete flooring.

Ceiling and walls - Ceiling heights of twelve to fifteen feet are most desirable for the laboratory shop. Dull glazed brick up five feet from the floor is desirable for the shop. The upper wall should be plas-

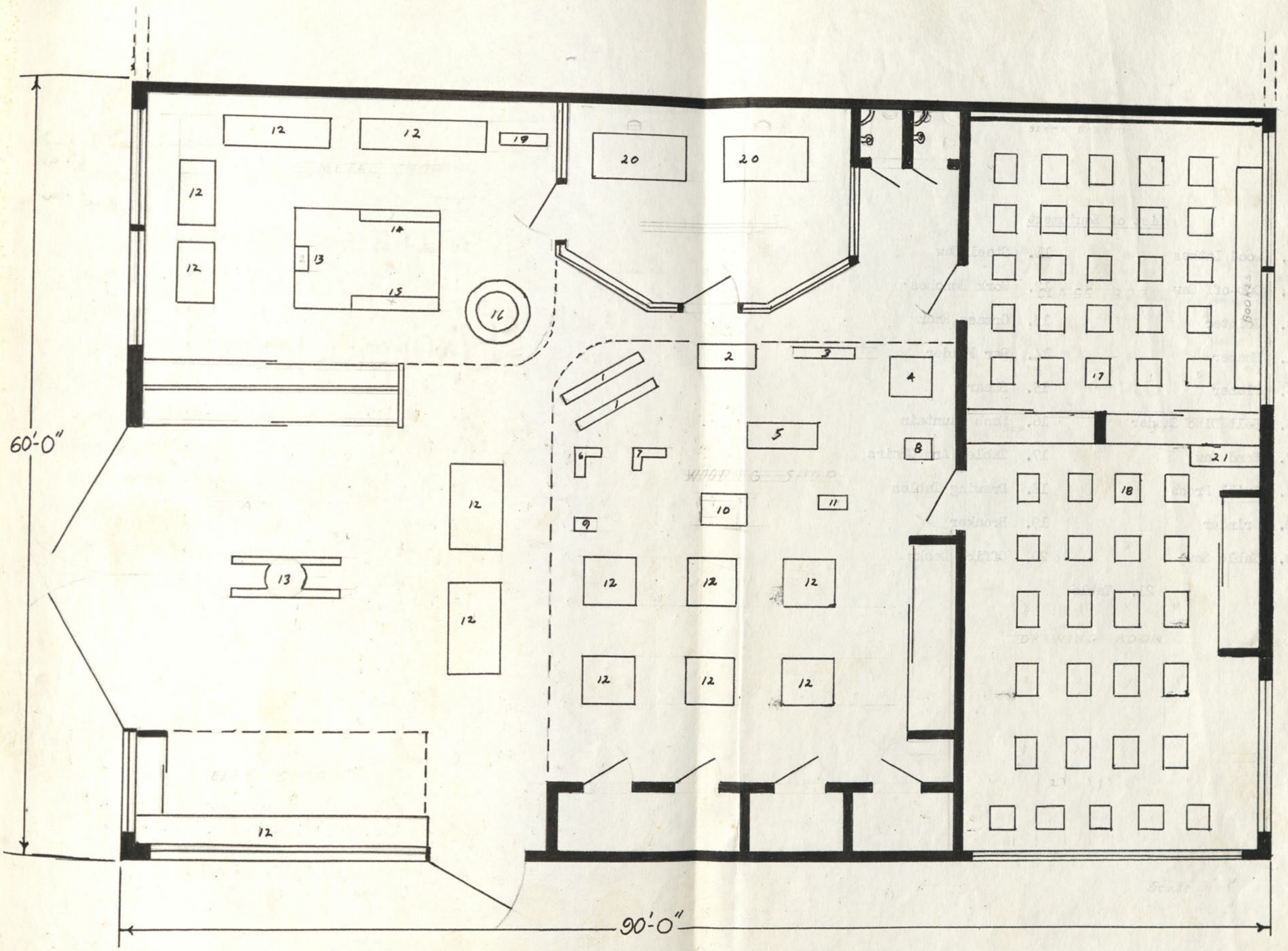


Figure 4. - A Floor Plan for an Industrial Arts Shop for the F. W. Gross High School

tered with an accoustical or soft plaster. Walls and ceiling should be light in color.

Plumbing - The laboratory should be provided with a drinking fountain. Washing facilities should be provided one for each eight pupils.

Lighting and Power - There should be a separation of light and power switches. There should be one primary switch controlling all power equipment. There should be a switch controlling each power machine. There should be a light, at bench height, on each machine and work station. Ceiling lights should be adequate.

Other Auxiliary Facilities - Tool cabinets or tool rooms should be centrally located. Storage and supply rooms should be placed where the space is not considered so valuable as that of working space. If possible a lecture or demonstration bench should be the form of permanent installation so located as not to have the pupils face the light, or a permanent classroom should be provided.

Equipment

The following items of equipment should be available in each of the shop areas following:

Metal Area

1 Bar Folder
1 Breaker
1 Slip Roll
4 Work Benches
1 Welding Unit (gas)
1 Welding Unit (electric)
2 Metal Shears (pairs)

Woodworking Area

1 Cutoff Saw
1 Jointer
2 Wood Lathes
6 Work Tables (with vises)
1 Planer
1 Table Saw (circular)
1 Disc Sander
1 Grinder
1 Band Saw
1 Jig Saw
1 Drill Press
1 Shaper

Auto Mechanics

2 Work Benches with Metal Vises
1 Grease Rack (hydraulic lift)
1 Battery Charger and Tester (6 volts)
1 Battery Charger and Tester (12 volts)
1 Motor Lift
1 Heavy Duty Grinder (two-horse power)
1 Motor Stand (universal)
1 Machine Vise
1 Drill Press
1 Galvanometer
1 Hydraulic Jack
1 Gas Welding Unit
1 Electric Welding Unit
1 Volt Meter (AC and DC)

Electrical Area

1 (22-foot) Work Bench with Outlets

Drawing Room

25 Drawing Tables
25 Stools
1 Blackboard
1 Teachers Desk

Classroom Area

25 Tablet Arm Chairs
1 Teacher's Lab Table
1 Blackboard

Tools

The shop should take the responsibility of owning an adequate supply of tools in each of the areas taught. Pupils should not be required to wait for the use of a tool. Each pupil should be able to check from the tool room or tool crib the tools that he will need for the completion of his work or project. A recommended supply of tools for each of the suggested shop areas are as follows:

Metalworking Area

Tool	Number	Tool	Number
Straight Snips	25	Stillson Wrenches	1
Set of Grooving Tools	1	Gas Furnaces	2
Curved Snips	10	Soldering Coppers	5
Cutting Nippers	6	Files (assorted sizes), sets	4
Riveting Hammers	6	Sets of Rivet Sets	2
Setting-down Hammers	6	Beakhorn Stakes	2
Flaring Hammers	2	Blowhorn Stakes	2
Scratch Awls	10	Needle-case Stakes	2
Set of Hollow Punches	1	Common Square Stakes	2
Set of Solid Punches	1	Hatchet Stakes	2
Cold Chisels	12	Bench Plates	6
Mallets	25	Set of Metal Spinning Tools	1
Dividers, 8 in.	12	Set of Safety Dogs	1
Circumference Rules	2	Steel Squares	6
Monkey Wrenches	2	Wood Turning Lathe	1

Woodworking Area

Tool	Number	Tool	Number
Smoothing Planes	25	Glass Cutters	10
Two-foot Rules	10	Yardsticks	6
Try Squares	25	Braces, Ratchet	10
Marking Gauges	10	Coping Saws	25
Screw Drivers	15	Wing Dividers	12
Back Saws	25	Block Planes	10
Rip Saws	6	T Bevels	6
Crosscut Saws	6	Spokeshaves	6
Cabinetmakers Clamps	36	Miter Saws	2
Jack Planes	25	Saw Set	1
Sets of Auger Bits	5	Saw Vise	1
Countersinks	6	Calipers	12
Nail Sets	6	Saw Files	6
Claw Hammers	25	Wood Files	25
Bench Brushes	25	Wood Turning Tools, sets	12
Mallets	25	Ball Pien Hammers	12
Bench Hooks	25	Putty Knives	6

Drawing Area

Drafting Boards	25	T Squares	25
Triangles, 30°, 45°	50	Compasses with Pens	25
Ruling Pens	25	Scales (architects)	25

Electrical Area

Tools	Number	Tools	Number
Voltmeters	6	Sockets, snap	12
Ammeters	6	Sockets, pull chain	12
Machinist's Vises	25	Doorbells	36
Pipe Vise	6	Buzzers	25
Assorted Files	36	Pushbuttons	36
Machinist's Hammers	6	Entrance Switches	6
Transformers (bell-ringing)	6	Snap Switches (single pole)	25
Receptacles (porcelain)	36	Snap Switches (three point)	25
Sockets, pushbutton	25	Lamps, 110-V	36
Screw Drivers	25	Pliers, side cutting	25
Ratchet Braces	6	Angle Braces	6
Blowtorch	1	Mallets	25
Hack Saw Frames	6	Pipe Wrenches	6
Hack Saw Blades	48	Claw Bars	6
Electric Motors	6	Electric Meters	6
Hand Saw (crosscut)	1	Hydrometer	1
Compass Saws	6	Telephones	6
Compass Saw Blades	24	Radio Chassis	1
S Wrenches, set	4	Extensions for Bits	6
Stocks and Dies, set	1	Drills, sets	6

Auto-mechanics Area

Tools	Number	Tools	Number
Bolt Cutters	6	Counter Brushes	12
Wire Brushes	12	Hand Drill	1
Garden Hose	1	Voltmeters, AC	6
Oil Cans, ½ pt.	6	Voltmeters, DC	6
Wheel Pulling Sets	2	Screw Drivers, sets	12
Oil Can (for springs)	6	Screw Drivers, Phillips	36
Files, sets	12	Twist Drills, sets	12
Paint Guns	2	Flangers (copper tubing)	12
Grinder	1	Sander, polisher	1
Sets of Pliers	25	Batteries, 6 Volts	12
Battery Fillers	6	Batteries, 12 Volts	12
Hydrometers, battery	12	Terminal Pullers	6
Open End Wrenches, sets	25	Closed End Wrenches, sets	25
Ratchet Wrenches,	25	Emery wheels	2
Soldering Iron Sets	2	Voltmeter, ohm millimeter	1

Supplies and Materials - There should be on hand or available at all times adequate supplies and materials for the pupil's use. In instances where there would not be an advantage to keep parts and other materials on hand, some means should be maintained to permit immediate access to them. A good control system should be installed in the stock or supply room to regulate the proper use of these items.

Teacher Qualifications and Class Load

State and local regulations set teacher qualification standards. Each teacher of the industrial arts subjects should possess a background of experiences and college preparation in the subjects that he is assigned to teach. He should have at least twelve hours of college credit in each of the shop areas that are taught at the school. Each teacher's class load should be no more than four classes per school day. Since there will be six hours in the daily teaching schedule, the other two hours should allow him time to plan for the (1) organization of class work, (2) up-keep of tools and equipment, (3) preparation of teaching aids, (4) shop library preparation and (5) attending clerical duties. The new proposed program for the F. W. Gross High School should include two shop teachers who could handle effectively instructions in all of the proposed shop areas.

The Curriculum

Since the basic needs of the youth of a community are those things which will help him to participate and function effectively in his communities activities, the school program ought to do just that. In order to satisfy the cultural and vocational needs of the youth of Victoria, and to meet the unit requirements for college entrance, Table X, on the following page, outlines a suggested program for the F. W. Gross High School.

TABLE X

SUGGESTED CURRICULUM FOR THE F. W. GROSS HIGH SCHOOL WITH AN INDUSTRIAL ARTS SPECIALTY

Ninth Grade	Tenth Grade	Eleventh Grade	Twelfth Grade
World History	Texas History; Government	National History; Govt.	Economics
English I	English II	English III	English IV
General Mathematics	Algebra	Plane Geometry	Chemistry
General Science		Biology	Descriptive Geometry
	Drawing I (Mechanical)	Drawing II (Mechanical)	
Physical Education	Physical Education		Typing
Industrial Arts:	Industrial Arts:	Industrial Arts:	Industrial Arts:
Woodworking	Woodworking	Metalwork	Electricity (Sem. 1)
			Auto-mechanics (Sem. 2)

Shop Activities

Activities in industrial arts for the pupils of the F. W. Gross High School should be centered around a group of projects which would arouse interest and provide opportunities for planning and learning the essential tool and machine processes. Students in the comprehensive general shop should have the opportunity to make projects from well-thought-of plans of their own as well as those of others. It is the teacher's responsibility to see that these pupils get the basic skills that each lesson intends to be taught. Those related items of information for the growth and understanding in the development of skills that are so vitally necessary should be paramount in the order of instruction.

Woodworking Activities - Wood is the most common medium of expression in school shop work. It has, and continues to be, the major activity in the industrial arts curriculum. One reason woodworking courses are extremely popular is that wood is easily formed and worked. Wood is cheap and under normal conditions it is easily obtained. Wood is used extensively in building construction and in the manufacture of many types of furniture and abounds in hobby possibilities. Woodworking activities may include designing and construction of some of the following:

Bookcases:

- Open front
- Open front with drawer
- With glass doors

Taborets:

- Four legged types
- Glued up bases
- Inlaid

Bookracks:

Trough type

Fixed ends

Adjustable ends

Tables:

Tilt top

Butterfly

Card

End

Coffee

Tavern

Console

Sewing, drop leaf

Telephone

Drop leaf

Vanity

Library

Davenport

Night

Trestle

Clover leaf

Candle stand

Snake foot

Hingham, round

Brookline lamp

Costumers:

Plain, straight shaft

Turned shaft

Kiddie type, bird hooks

Inlaid

Bookends:

Plain, no base

With moulded base

Veneered

Cabinets:

Victrola or Radio, portable

Radio, open front

Television

Pier

Desks:

One drawer, sloping top

Five drawer, knee hole

Double front, with book rack

Weymouth

Secretaries

Spinet

Chairs:

Simple kitchen or dining room

Living room , upholstered

Rockers

Turned Projects:

- Gavels
- Table lamps
- Mallets
- Candle sticks
- Stocking darner
- Rolling pin
- Potato masher
- Towel rack
- Nut bowls
- Pin Trays
- Fruit bowls

Stools:

- Kitchen
- Kitchen, ladder type
- Kitchen, four legged
- Windsor
- Upholstered (rolled edge)
- Upholstered, open top, webbing
- Upholstered, spring seat
- Upholstered, Set in seat

Sewing Cabinets:

- Priscilla, floor type, turned legs
- Priscilla, table type, floor type

Benches:

- Piano
- Telephone
- Boudoir
- Cobblers
- Home workshop

Garden Furniture:

- Arbors
- Lawn cut outs
- Trellisies
- Picnic table
- Beach chairs
- Wooden chairs

Trays:

- Straight outline
- Curved outline
- Novelty forms
- Sick room, bed type
- Wall rack (straight-corner)

Cupboards and China Closets:

- Dutch
- Welsh
- English
- Corner

Boxes:

Jewelery

Sewing

Silverware

Humidors

Inlaid, for stationery, handkerchiefs, etc.

Play Production:

Simple flats

Flat with door or mirror

Flat, irregular outline

Simple stairs

Properties (various kinds)

Miscellaneous:

Cedar chests

Portable Mirrors

Portable mirrors (tilting)

Magazine racks

Clock cases

Poster, beds

Buffets

Chest of drawers

Tea wagon

Metalwork Area

The various fields of metalwork have played an important part in the development of civilization and are the foundations of modern industry today. Many of the metals or their alloys lend themselves to simple hot and cold processing and can be taught in all levels of industrial arts work. The metalwork activities should include the designing and making of the following:

Boxes:

Mail

Soap Powder

Glass top and shelf

Boxes: (continued)

Tool

Bait

Fishing tackle

Lamps:

Bridge

Desk and table

Night

Extension

Porch

Pin-up

Copper, Aluminum and Silver:

Bar pins

Braclets

Match box holders

Ash trays

Card trays

Bon bon dish

Letter openers

Blotter holders

Stationery holders

Cigarette case

Candle holder and snuffer scones

Book ends

Medals

Tables and Stands:

Tile Top

Porch

Nest of

Floor

Coffee

Leaf top folding

Tray top folding

Tray top smokers

Three legged refreshment

Two tray smokers with table top

Forging and Machine Shop:

Cold chisels

Wrecking bar

Auto tire changing irons

Center punches

Scribers

Hammer heads

Screw drivers

Marking gauge

Depth gauge

Paper weight

Stock for dies

Two-handled tap wrench

Drill press vise

Plant and Flower Holders:

Ivy bowl wall bracket

Jardinieres

Ferneries, floor type

Suspended flower pot containers

Floor stand (autumn foliage)

Soft Metal Castings:

Paper weights

Wall plaques

Door stops

Fishing sinkers

Book ends

Model boat keels

Fireplace Equipment:

Andirons

Tool holder

Shoval

Tongs

Poker

Screen

Wood basket

Miscellaneous:

Door knockers

Foot scrapers

Weather vanes

Basketball rings

Christmas tree holders

Trowels

Electrical Area

No attempt should be made to teach a course in electricity to mislead the pupils to think of themselves as electricians. A general, practical outline of experiences should be organized to acquaint him with factors relating to electrical appliances of a simple kind. The electrical activities may include the following:

1. Detect and replace blown fuse
2. Assemble and repair an attachment cord
3. Hook up doorbells and buzzers
4. Wire an extension for a lamp
5. Read the electric meter

6. Give first aid to one who has received severe electrical shock.
7. Install a radio set
8. Do simple house wiring
9. Test for defective wiring
10. Installation of two-way switches
11. Installation of three way switches
12. Repairing electric irons
13. Repairing electric curling irons
14. Repairing hot plates
15. Making simple lamps

Auto-mechanics Area

Every boy and girl should have a knowledge of the fundamental principles of the operation of a car and the ability to make minor emergency repairs. The intelligent use and care of a car results not only in an appreciatiable economic saving but also tends to insure the safety of the driver and the passenger. Auto-mechanics activities should include the following:

1. File and adjust distributor points
2. Locate, test and adjust, and replace condenser
3. Remove, clean and adjust spark plugs
4. Remove cylinder head - remove carbon
5. Clean out radiator
6. Remove and replace fuel pump
7. Install and adjust windshield wipers
8. Replace horn connections

9. Take storage battery from car and replace with another
10. Adjust stop light relay
11. Locate and install fuses
12. Install bulbs in stop light, rear light, dash and inside light
13. Remove and replace sealed beam headlights
14. Adjust door catches
15. Adjust brakes
16. Remove tire and wheel from car and make replacements
17. Repair a blow-out in a tire
18. Drain and flush crank case
19. Install seat covers
20. Grease a car
21. Wash a car
22. Polish a car
23. Starting a flooded engine

Drawing Area

Boys and girls should be able to make working drawings of their projects and should be able to read the drawings of others. They should be able to understand diagrams, sketches and other information related to installation and assembly of items of utility value. The drawing curriculum for the boys and girls at the F. W. Gross High School should be centered around the following:

1. The kind of scales used in measuring drawings
2. The names and uses of drafting instruments
3. The kinds and qualities of drawing paper

4. Kinds of lettering instruments
5. Measuring with the use of a scale
6. Planning an outline for a drawing
7. Planning a drawing and laying out the sheet
8. Using the common drawing instruments
9. How to make a drawing to scale
10. How to dimension a drawing
11. How to make a three view drawing
12. How to ink lines using the inking pen
13. How to ink a drawing
14. How to letter the alphabet using vertical letters
15. How to draw sectional views
16. How to draw auxiliary views
17. How to draw screw-threads for bolts and screws
18. How to make geometric drawings
19. How to make isometric drawings
20. How to make oblique drawings
21. How to make perspective drawings

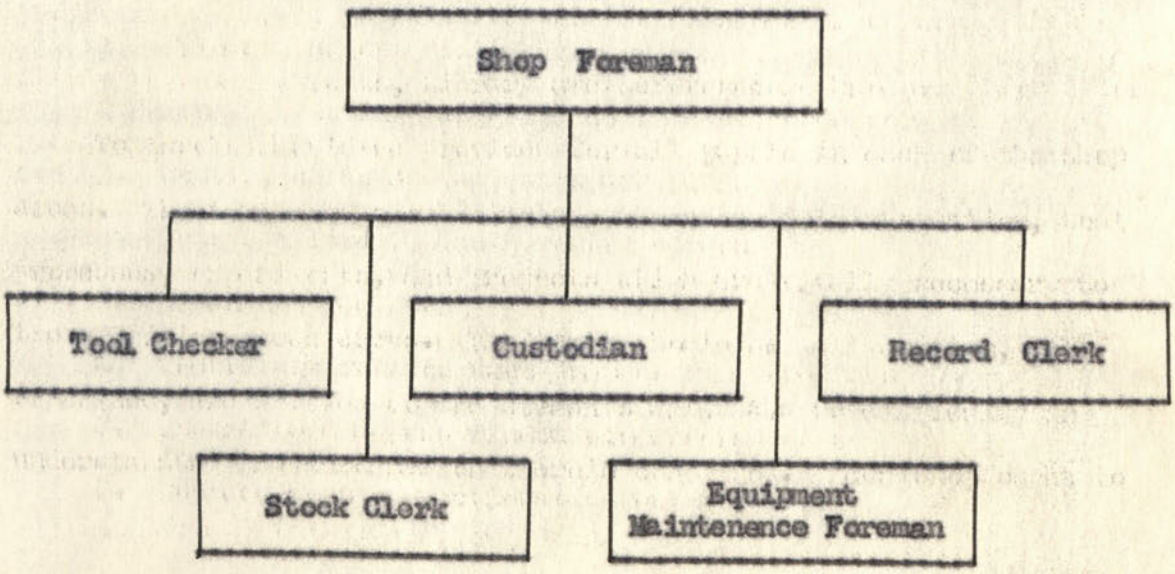
Texts, Library and Reference Books

Textbooks should be provided for all pupils in each of the shop areas. The textbooks should include the essential information, tool processes, experiments, and projects which are vitally necessary to the specific course areas. The texts should be well written, well organized, and written so the students will have no difficulty in understanding the information therein contained. Each shop ought to

keep a well selected supply of reference materials on hand. The modern industrial arts shop will maintain a well organized library where these reference materials will be kept. An adequate supply of books related to each of the areas taught. There is a wealth of reference material supplied by manufacturers that the library should contain which should be incorporated into teaching plans. Students should be directed to make use of these materials in any situation which would be helpful in their understanding of the course work involved.

Student Personnel Organization

Shop controls delegated to students is a useful teaching device. By delegating responsibilities to students the teacher lessens his shop supervisory activities and, at the same time, this gives to the students a sense of importance and belonging. Duties are formulated and explained to the students so that they will know what is expected of them. They may be rotated through each of the various responsibilities. Each shop area should be organized in the following manner:



CHAPTER VII

SUMMARY, RECOMMENDATIONS AND CONCLUSION

The primary purpose of this study was to propose and prepare a reorganization of the industrial arts program at the F. W. Gross High School of Victoria, Texas. This has been done in relationship to the needs of the industrial community and the individual needs of the pupils concerned. Since schools have an obligation to provide the experiences that youth of today will require to function effectively in tomorrow's world, no less should be expected of the F. W. Gross High School. Our survey indicated definite pre-vocational needs on the part of the youth that the Gross High School serves. It was found that an effort is being made in the right direction but that effort has been judged to be at a minimum so far as industrial orientation is concerned.

This investigation showed that the Victoria community is one of the wealthier communities. This tremendous wealth is waiting to supply the City, County and surrounding sections with a public school system second to none in the state of Texas. It is hoped that this will guide the thinking of those responsible for the school systems and that more concerted effort could be made toward enriching the program of industrial arts at the F. W. Gross High School.

Victoria was one of the first cities, among a large number, to integrate or open all of its schools to all of its citizens. The people of industry of Victoria have indicated in many instances that job

opportunities are available to qualified people without regard to race, creed or color. In light of these pronounced statements of policy on the part of the industrialists, it ought to be the job of the schools to prepare school youth in all aspects of training which would lead to vocational competency.

The study recommends in bold statements that the F. W. Gross High School should have a comprehensive general shop program. The program should include five areas; drawing, woodworking, metal work, electricity and auto-mechanics. This recommendation was not made on heresay or the thinking of the writer alone. It is based upon the data and information herein contained in the study. Through interviews held with the industrial people and conferences held with many school people of Victoria certain basic needs of the local studnets were established. Other needs were established through information gathered from reading from the writings of authorities in the field of industrial education. The comprehensive general shop plan was thought to be ideal for the F. W. Gross High School. The areas to be included would give initial or beginning workers those basic skills and information needed for industrial job success.

Information from many sources in Victoria stressing the tremendous growth of the community in the last ten years also pointed out possibilities for continued growth in the next ten years. Special emphasis was placed upon the fact that this growth can largely be attributed to the huge industrial expansion. Industrial expansion brings with it growth in population. Greater populations usually places certain strains upon existing school facilities. When this

occurs informed school authorities will examine their programs to determine if existing school facilities and programs are adequate or should they reorganize them to accomplish new sets of objectives.

This study has proposed to enrich the program at the F. W. Gross High School. It has proposed a reorganization within the framework of the existing program of the school. Therefore, the proposed new shop program could be accomplished with a minimum of effort and expense to the community. It was found that the present shop program served a purpose; however, limited in scope. Its one-teacher program ought to be expanded into a two-teacher program. Instead of the present program's inclusion of 105 boys it should be expanded to include all of the presently enrolled high school boys and perhaps some girls could be included in the shop program.

Beginning with a philosophy and statement of purposes of the school and the industrial arts department we have completely outlined a program which could be used and which should obtain effective results. This program has been detailed exclusively for the F. W. Gross High School and was not intended to serve specifically the needs of any other. Detailed proposals for program, shop, classes, building facilities, shop equipment and tools and activities are herein included to facilitate its operation should the program be placed into operation.

The principal, teachers and other school workers should have the insight and desire to want to achieve for the pupils in their care the best educational program, facilities and opportunities available for future use. In order that this might be accomplished in the industrial

arts department at the F. W. Gross High School the following recommendations are made:

1. That the program of industrial arts be reorganized to include the program as outlined in this study
2. That the physical plant to house the industrial arts program should immediately be procured
3. That the shop program include all of the suggested tools, machinery and equipment
4. That consideration and implementation be given to this proposed reorganization.

Conclusion

The writer is hoping that this study will activate school boards, administrators and supervisors, and others concerned with the development of Victoria's youth, to become aware of those pressing needs of the young people. Those specific needs centered around job opportunities are hungry for satisfication. All young Victorians should be prepared adequately to accept jobs that will enable them to live productively, richly, effectively and happy.

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APPENDIX A

QUESTIONNAIRE

An outline of basic questions to be asked during interviews with employment managers or others who are responsible for engaging the working force of businesses, plants or other enterprises of Victoria, Texas.

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1. What is the nature or type of your business?

2. What products do you manufacture? or,

3. What services do you offer to the public?

4. How many employees does your business employ at the present time?

5. How many people do you estimate that your business will need in the next ten years?

6. Do you employ boys right out of high school?

7. At what jobs do you employ them?

8. Are Negro boys used by your business?

9. At what jobs do you employ or use Negro boys?

10. What basic skills should the high schools teach to the boys to make them employable to your business?

11. What specific knowledges would you recommend that the high schools teach to the boys that you would employ?

12. Would you recommend that the high schools plan vocational programs to teach the basic skills required of skilled craftsmen?

13. What do you estimate the employment outlook to be for Negro boys of Victoria for the next ten years?

14. Does your company offer training to the new employees taken into its employment?

15. Are you in favor of additional city taxes to finance a more constructive industrial arts program in the high schools?